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Docket No.: GR 97 P 2734

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By: Morgan V. [Signature]

Date: March 5, 2004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Before the Board of Patent Appeals and Interferences

Applicant : Frank Hintermaier Confirmation No. 7324
Applic. No. : 09/161,196
Filed : September 25, 1998
Title : Capacitor Having a Barrier Layer Made of a
Transition Metal Phosphide, Arsenide or
Sulfide
Examiner : Cuong Q. Nguyen
Docket No. : GR 97 P 2734
Art Unit : 2811
Customer No. : 24131

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REPLY BRIEF

Hon. Commissioner of Patents and Trademarks,
Washington, D. C. 20231,

S i r :

This Reply Brief is in reply to the Examiner's Answer dated
February 5, 2004.

Arguments:

The contents of the *Grounds of Rejection* and the *Response to Argument* in the *Examiner's Answer* dated February 5, 2004, are identical to the contents of the *Grounds of Rejection* and the *Response to Argument* in the *Examiner's Answer* dated March 21, 2003, except that the *Examiner's Answer* dated February 5, 2004, contains one new sentence on page 5, which states:

Declaration filed on 11-04-02 has been not considered because it is not directed solely to issues which were newly raised by the Examiner in the final rejection.

The Examiner issued an *Advisory Action* dated February 4, 2004, in which box 6 ("The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection") was marked with an X. Otherwise, the *Advisory Action* contained no other information or comments by the Examiner.

Appellant stated on page 12 of the *Brief on Appeal*, that:

In the *Response to Arguments* in item 2 on page 4 of the Office action dated June 4, 2002, the Examiner stated that: "... In response, the arguments of counsel cannot take the place of evidence in the record." In view of the Examiner's response, Appellant filed with the response dated October 4, 2002, a *Declaration under 37 C.F.R. § 1.132* ... (Counsel telephoned the Examiner on September 26, 2002, and discussed with the Examiner the above-noted declaration. Counsel's understanding of the telephone conversation with the Examiner was that the Examiner *will* consider the declaration in spite of being filed in response to a final Office action.)

(Emphasis added.)

Appellant is very well aware of the provisions of MPEP § 715.09(C)(1) (*Seasonable Presentation*), and therefore, as a general preposition, always asks the Examiner beforehand whether or not a declaration filed in response to a final Office action will be considered, or whether an RCE will be required in order to have a declaration considered.

In the *Remand to the Examiner* on page 3, second-to-last and last line, the Board stated:

the examiner has misquoted appellant with respect to quoting "group *IIB*" instead of the correct "group *IIIB*"

(Emphasis added.)

The Examiner did not correct this "oversight" in the *Examiner's Answer* dated February 5, 2004.

In the *Remand to the Examiner* first paragraph on page 4, the Board stated:

Appellant has submitted several references as evidence that gallium is a Group IIIB element and not a transition element (Brief, pages 9-10; Reply Brief, page 4; see the Response dated Nov. 4, 2002, Paper No. 27). ***The examiner does not address this countervailing evidence in the Answer.***

(Emphasis added, footnote omitted.)

The Examiner did not "address this countervailing evidence" in either the *Advisory Action* dated February 4, 2004, or the *Examiner's Answer* dated February 5, 2004.

On page 1 under the heading "Examiner's Answer", the *Examiner's Answer* dated February 5, 2004, states:

This is a revised examiners answer for correcting **some minor defects** as pointed out in the Remand of Board of Appeals and Interferences on 10-31-03.

(Emphasis added.)

Appellant assumes that the Examiner interpreted the Board's comments in the *Remand to the Examiner* to mean that only minor formal matters needed correcting (i.e. mailing an *Advisory Action* and making the appropriate corrections in the *Prior Art of Record*).

Since the Examiner did not bring forward any new substantive arguments, in order to expedite the proceedings, Appellant merely repeats the arguments brought forward in the *Reply Brief* dated and filed May 21, 2003.

The fourth paragraph on page 5 of the *Examiner's Answer* dated February 5, 2004, states:

Applicants argue that US 705,685 is in a field of "telephony" which is different than the field of the present invention, so it can not be used as a reference against the present invention. In response, US 705,685 is used to support the fact that gallium is a transitional element. This chemical fact is true for all fields and not just true only in telephony filed.

The above characterization of Appellant's argument is a distortion of the actual arguments brought forth by Appellant.

Appellant stated in the second paragraph on page 8 of the *Brief on Appeal* that:

US 705,685 (*Lyons*) was issued on July 29, 1902, and it pertains to telephony. US 705,685 mentions neither "transition metals" nor "Gallium", and is in a field of "telephony" which is a completely different field of technology than the field of technology of the instant application. It is assumed that either the patent number cited by the Examiner is incorrect or that the Examiner may have confused the name of the inventor Joseph Lyons of US 705,685 with the name of the (co)inventor, James E. Lyons, of US 5,990,348, US 6,043,184, and US 6,060,419.

Appellant still asserts that US 705,685 contains neither the word "gallium", the term "transition metal", nor any passage that could be considered as representing any kind of definition of the term "transition metals". It should be noted that the Examiner has failed to point out any passage in US 705,685 (*Lyons*), which would support the Examiner's argument that the element gallium is a transition metal.

The sixth paragraph on page 5 of the *Examiner's Answer* dated February 5, 2004, states:

Applicants argue that in the expression "X is a group ***IIB***, IVB, VB, VIB or transition element, such as phosphorus, silicon, gallium, aluminum, arsenic, germanium, boron, cobalt, cerium, praseodymium, uranium and thorium", the list "phosphorus, silicon, gallium, aluminum, arsenic, germanium, boron, cobalt, cerium, praseodymium, uranium and thorium" refers to groups ***IIB***, IVB, VB, VIB and transition element, but not transition metals alone, so gallium is not a transition element.

(Emphasis added.)

The Examiner replied to the above-noted arguments by Appellant by stating, "[i]n response, in PERIODIC TABLE OF ELEMENTS, groups ***IIB***, IVB, VB, VIB do not contain gallium, so gallium has to be a transition element." (Emphasis added.)

The above argument is based on an incorrect quotation and application of Appellant's argument. The third paragraph on page 8 of Appellant's *Brief on Appeal*, stated:

In column 8, lines 2-5, (similarly, column 10, lines 23-27, and column 14, lines 45-48) *Lyons et al.* state that "X is a Group ***IIIB***, IVB, VB, VIB **or** transition element, such as phosphorus, silicon, gallium, aluminum, arsenic, germanium, boron, cobalt, cerium, praseodymium, uranium and thorium" (emphasis added). It is believed that the Examiner's insistence that Gallium is a transition metal is based on this passage.

(Underlining added for emphasis.)

Gallium is unquestionably categorized as a IIIB element in the PERIODIC TABLE OF ELEMENTS. This is clearly stated in each and every one of the numerous citations from the standard chemical text books ("Main Group Chemistry", "Concise Encyclopedia of Science & Technology") and portions of encyclopedias filed by the Appellant.

The first paragraph on page 6 of the *Examiner's Answer* dated February 5, 2004, states:

Applicants argue that the word "can" in the expression "Certain Group VB nonmetal elements, such as: N, P, As, and Sb can react with titanium to form barrier material (e.g., TiN, TiP, TiAs, and TiSb)" in US6015997's col.7 lines 55-57 is not absolute or certain. Therefore, it is not inherent that the transition metal layer will react with phosphorous from the connection structure.

(Emphasis original.)

The Examiner replied to the above-noted arguments by Appellant by stating:

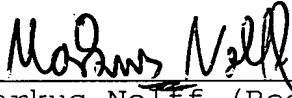
In response, the definition of word "can" according to Webster's dictionary is "to be able to do, make, or accomplish"; none of these meanings means "not absolute" or "not certain" as alleged by Applicant. Therefore, according to the teaching of US6015997, the transition metal layer (12) in Kawakubo et al. **will react** with phosphorous from the connection structure to form a barrier material layer of TiP or TaP as claimed.

(Emphasis added).

As discussed in MPEP § 2112, an element of a claim that is not expressly or implicitly disclosed in a prior art reference is inherently disclosed therein if, and only if, the "missing" element is **necessarily** present in the prior art. "Can" is not "necessarily" or "will".

The honorable Board is therefore respectfully urged to reverse the final rejection of the Primary Examiner.

Respectfully submitted,



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